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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,210	10/01/2003	Junji Yamauchi	17079	9725
23389	7590	12/23/2004		
SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA GARDEN CITY, NY 11530			EXAMINER KALIVODA, CHRISTOPHER M	
			ART UNIT 2883	PAPER NUMBER

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,210

Applicant(s)

YAMAUCHI ET AL.

Examiner

Christopher M. Kalivoda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/01/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by McGreer et al., Regarding independent claim 1 as claimed, McGreer et al. teach 1. An optical multi-demultiplexer comprising:

a substrate (col 8, lines 56-60 and Fig 2B, ref sign 24);

input waveguides formed on the substrate (col 5, lines 37-45 or col 13, lines 49-52 and Fig 10, ref sign 62);

a channel waveguide array including a plurality of curved waveguides arranged such that optical path lengths of adjacent ones of the curved waveguides are

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gradually increased from an inside toward an outside of a curved configuration of the curved waveguides (col 5, lines 37-45 and Fig 10, ref sign 64);

output waveguides formed on the substrate (col 5, lines 37-45 and Fig 10, ref sign 66);

a first slab waveguide formed between the input waveguides and the channel waveguide array (col 5, lines 37-45, Fig 10, ref sign 16A);

a second slab waveguide formed between the channel waveguide array and the output waveguides (col 5, lines 37-45, Fig 10, ref sign B), and

a different refractive index region formed at a position close to the channel waveguide array within the second slab waveguide (Fig 10, ref sign 20), the different refractive index region having a refractive index different from a refractive index of the second slab waveguide (col 8, lines 60-64), and the different refractive index region extending in a direction in which the waveguides of the channel waveguide array are arranged (Fig 10, ref sign 20 – please note, since the region 20 appears elliptical, the major axis extends in the same direction as the waveguide array – upwards, the minor axis extends in the same direction as the lengths).

Regarding claim 2, the different refractive index region has a lower refractive index than a core of the second slab waveguide (col 4, lines 37-41).

Regarding claim 3, the different refractive index region has a refractive index equal to a refractive index of a clad layer of the second slab waveguide (col 9, lines 1-4).

Regarding claim 4, wherein the different refractive index region has a tapered shape decreasing in width toward a central portion of the second slab waveguide (Fig 2A) where lens (which is the region of different index) tapers in then back out

Regarding claim 5, the different refractive index region has a higher refractive index than a core of the second slab waveguide (col 4, lines 37-41).

Regarding claim 6, the different refractive index region has a reverse-tapered shape increasing in width toward a central portion of the second slab waveguide (Fig 3A) where lens (which is the region of different index) tapers out and then back in.

Regarding claim 8, the different refractive index regions are spaced apart from each of both sides of the second slab waveguide (Fig 10, ref sign 20) where ref sign 20 is between both sides of the slab waveguide 16B.

Regarding claim 9, the different refractive index region has a width varying in a direction in which the waveguides of the channel waveguide array are arranged (please note, since the region 20 appears elliptical, the major axis extends in the same direction as the waveguide array – upwards, the minor axis (width) varies in the same direction).

Regarding claim 10, the different refractive index region has a refractive index varying in a direction in which the waveguides of the channel waveguide array are arranged (see Fig 2A or 3) since the lenses are materials of different refractive index.

Regarding claim 11, there can be island regions having a refractive index different from each of the first and second slab waveguides formed in addition to the different refractive index region, on at least one of a position close to the channel waveguide array within the first slab waveguide and a position close to the channel

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waveguide array within the second slab waveguide (col 13, lines 53-54) since there can be arrays of these regions (Fig 5A) and the islands can be on one or both slab waveguides .

Allowable Subject Matter

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: a review of prior art failed to make obvious, disclose or fairly suggest an optical multi-demultiplexer comprising a different refractive region comprising a pair of peninsular different refractive index regions projecting from both sides of the slab waveguide toward a central portion of the slab waveguide.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,549,696 describes a slab waveguide with island regions of differing index. However, they do not project from the sides of the slab and are not peninsular. In addition, U. S. Patent Application Publication 2002/0159696 has the same assignee and at least one common inventor. As claimed, this reference describes the limitations in at least claim 1.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is (571) 272-2476. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, consisting of a stylized 'A' followed by a long horizontal line.

12/17/04